DOCUMENT RESUME

ED 050 558 EM 008 918

TITLE	Survey and Study of Educational Broadcasts; 1960 - 1968.
INSTITUTION	Japan Broadcasting Co., Tokyo
PUB DATE	69
NOTE	35p.
EDRS PRICE	EDRS Price MF-$0.65 HC-$3.29
DESCRIPTORS	Attitudes, Audiovisual Aids, Changing Attitudes, Concept Formation, Correspondence Study, *Educational Television, English Instruction, Ethical Instruction, Home Study, Instructional Television, *Program Effectiveness, Rural Education, Science Instruction, Slow Learners, Surveys, Teacher Attitudes, *Televised Instruction, *Television Research, *Television Surveys, Violence
IDENTIFIERS	*Japan

ABSTRACT

Japan's educational television and radio network, NHK, conducted surveys and studies on the use and effects of its programs from 1960-68. The major surveys, each of which is summarized in this booklet, cover four categories: the utilization of educational programs, analysis and evaluation of selected programs, the effect of educational programs, and the effect of non-educational broadcasting (entertainment and adult programs) on children. The first category includes surveys on the utilization of school broadcasts by schools, on school teachers' views of educational broadcasting, and on the daily life of high school students taking correspondence courses and their utilization of broadcasts. The second group of studies analyzed a fourth-grade science class and a junior high school English class and also included a study on the function of audiovisual methods in concept formation. Studies in the third category looked at the effects of television programs in teaching English, in teaching moral guidance, and on children in isolated villages. Included in the fourth category are studies on the effects of violent scenes on children and on ways of changing children's choice of programs. (JK)

ED050558

SURVEY AND STUDY OF EDUCATIONAL BROADCASTS (1960~1968)

Radio and Television Culture Research Institute
JAPAN BROADCASTING CORPORATION
1969

EM 008 918

1

ED050558

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

SURVEY AND STUDY OF EDUCATIONAL BROADCASTS (1960~1968)

JAPAN BROADCASTING CORPORATION
1969

Table of Contents

NHK Educational Broadcasts 1

Introduction to Recent Studies 4

Sphere of Study 4

I Survey on Utilization of Educational Programs 4

1. Qutline of the National Survey on Utilization of School Broadcasts by Schools 4

2. Survey on School Teachers' View of Educational Broadcasting 6

3. Survey on the Daily Life of Senior High School Students Taking Correspondence Courses and on their Utilization of Broadcasts 12

II Studies on Production of Education Programs 15

1. Studies for Analysis and Evaluation of Education Programs. 15

2. Studies on the Principles of Program Production 18

III Studies on Effects of Programs 25

IV Studies on Effects of Broadcasts on Children 29

To our Readers 32

NHK Educational Broadcasts

Before reviewing the scope and results of our study, let us briefly introduce to you the present situation of NHK educational broadcasting and some of its outstanding characteristics; for it is to be hoped that the subjects and results of our study should be understood in the light of knowledge of educational broadcasts in Japan as a background.

NHK broadcasting programs are so organized to harmoniously combine education, culture, news, and entertainment. Above all, NHK, whose mission it is to contribute to the improvement of the educational level of the nation and to the advancement of social relations, devotes many broadcasting hours to educational and cultural programs. This fact may be clear from Table 1.

Table 1. Classified Percentage of NHK Programs (1968)

	General TV 18 hours*	Educational TV 18 hours*	Radio 1st Programs 19 hours*	Radio 2nd Programs 18.5 hours*	FM 18 hours*
Education Programs	9.4%	76.5	5.7	65.4	10.8
Culture	30.4	21.2	24.8	21.8	46.3
News	38.0	2.3	43.3	9.9	14.4
Entertainment	22.2	0	26.3	2.9	28.5

* Broadcast hours per day

Educational and cultural program can further be divided as follows.

1. The school hour
2. Special TV class for the handicapped (i.e. dumb, deaf, and crippled children)
3. Correspondence broadcasting courses
4. Foreign languages
5. Technical education courses
6. Agriculture programs
7. Business management courses
8. Programs for infants, children, and youth
9. Programs for women

10. Science programs
11. Culture programs

As it is impossible to survey the studies made on all the kinds of programs cited above, we shall confine ourselves to educational programs in a narrow sense. That is to say, we shall take up only those educational programs whose audience we have difinitely in mind, and whose contents are systematically organized and incorporated into a plan for the year. In other words, we shall treat only of studies centering on 1, 2, and 3 named above, and a study of the effect of general programs on children.

It will be a great help in understanding and appreciating studies on these programs to have a general knowledge of these programs themselves.

School - broadcast programs

NHK school-broadcast has a history of thirty years in radio and thirteen years in television, so that the day is not distant when the majority of the Japanese people will have studied from radio and/or television.

According to the 1968 broadcasting schedule of NHK, the total number of school-broadcast programs intended for the kindergarten, primary school, lower secondary school, senior high school, and correspondence high school is 155 a week (46 hours and 5 minutes) on the radio, and 136 (59 hours and 50 minutes) on television. Subjects that are broadcast include Japanese, mathematics, science, social studies, English, music, and moral guidance while there also are special program for blind, deaf-and-dumb, and feeble-minded children, and the school-teacher's hour.

To what extent are these programs utilized by schools? A nation-wide survey conducted by our institute has found that no small proportion of all the schools in Japan are utilizing these programs. For instance, 88.4 per cent of the primary schools, are users of TV school-broadcasts.

It should further be mentioned that the contents of NHK school-broadcast programs are carefully chosen in conformity to the Course of Study issued by the Ministry of Education and fit into a whole-year plan, so that they may serve as a part of the educational program of each school.

Needless to say, such programs are drawn up on the basis of reports sent in by a consultative committee composed of school teachers and people with experience and concern, schools that have had some experience with educational broadcasts, or our institute itself.

Since it is usually the case with Japanese school teachers to view pro-

grams in class together with their pupils, the educational effectiveness of the programs is likely to depend a great deal upon the teachers' guidance. But the programs themselves are so designed that they may be fully effective even without a teachers' guidance.

Lastly, it may be noted that there is in Japan an independent research body composed of teachers who are interested in the utilization of school broadcasts. This body, called National Radio-TV Education Association, has been active in promoting educational broadcasting in cooperation with NHK since its inauguration in 1950. Its membership is increasing steadily, and the number of its member schools from kindergarten to high school has already reached 47,000.

Special Program for mentally or physically handicapped children

Japan seems to be behind European countries in education for mentally or otherwise handicapped children _____ children who are blind, deaf, crippled, or feeble-minded. For these unfortunate children, NHK, as a public service corporation, is eager to offer more and more educational opportunities.

Correspondence broadcasting courses

For young people who are ready to study while on the job, NHK is now offering programs intended especially as senior high school correspondence courses of 17 hours 45 minutes per week on the radio, and 17 hours 30 minutes on television. Students taking the correspondence course of education to obtain qualification for the completion of a high school course, they must have 20 days' schooling in addition to the regular correspondence course of education, but if they study by taking NHK correspondence broadcasting courses it is stipulated by law that they get 30% exemption from schooling in the case of the radio, 50% exemption in the case of television, and 60% exemption in the case of utilizing both.

While broadcasting programs for ordinary correspondence course students, NHK founded a correspondence course senior high school of its own in 1962. Students who have entered this school are now found all over the country and number about 15,000. Besides being guided by the NHK correspondence course and textbooks, they are each given schooling once or twice a month by a correspondence course high school near their homes at NHK's request.

Moreover, these students living in seven areas divided for broad-

casting convenience are gathered together twice a year by NHK and given joint schooling in the same institution.

The above is a rough sketch of what NHK educational broadcasting programs are doing. Let us next see what kind of studies have been done on these programs.

Introduction to Recent Studies

Sphere of study

Our study can be divided into four fields. The first is a study on the utilization of educational programs, the second an analytical study of these programs, the third a study of effect measurement, and the fourth a study of effects upon children of both entertainment programs intended for them, and adults programs.

Let us introduce to you some of the major studies conducted by us in each field from 1960 up to the present.

I. Survey on Utilization of Educational Programs

Every year since 1950 we have been making a national survey on utilization of school broadcasts by primary and lower secondary schools. Also, since 1963 we have made an intensive inquiry into the view schoolteachers take of school broadcasts, and into the daily life of high school students taking correspondence courses. Beside these, there are other surveys we have made on the same subject, but as the most important of them all we shall confine ourselves only to three most important ones.

1. Outline of the national survey on utilization of school broadcasts by schools

We made 1968 survey on the same scale and by the same method as in other years. This survey was made by mail in order to ascertain how widely radio and television sets have come to be furnished to schools, and how much broadcasts are utilized. The subjects of our survey and their number are as shown in Table 2.

Table 2. Scope of Survey and number of valid answers

	Total number of schools	Extraction radio	Sample number of schools	Number of valid answers	Rate of valid answers
Kindergartens	9,588	1/10	960	790	82.2%
Nursery Schools	12,873	1/10	1,300	1,103	84.8
Primary Schools	25,485	1/13	2,000	1,829	91.5
Junior High Schools	11,671	1/5	2,000	1,837	91.9
Regular Full Time High Schools	4,086	1/2	2,000	1,848	92.4
Part Time High Schools	1,981	1/2	1,000	859	85.9
Total	65,684		9,260	8,266	89.3

Results of the Survey

Figure 1 shows how large a proportion of all the schools are furnished with radio and television sets, and what per cent of the schools which are equipped with those sets are utilizing school broadcasts.

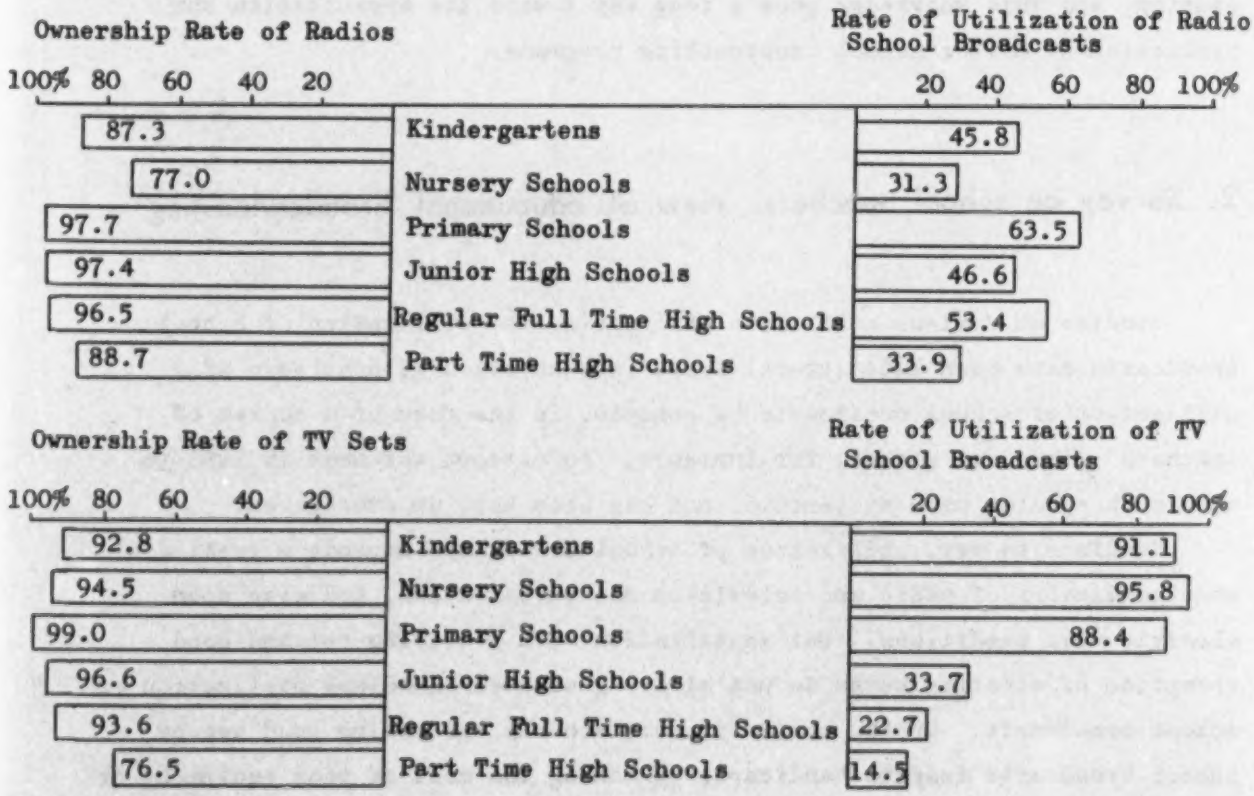


Fig. 1. Ownership rate and rate of utilization

The radio and television set equipment rate has already reached the peak and is much the same as that of last year. The proportion of schools systematically utilizing radio school broadcasts is nearly the same as last year, but those schools which are utilizing television school broadcasts are increasing. In recent years, the number of schools furnished with video tape recorders (VTR) has been showing a considerable increase. The utilization of school broadcasts by means of TVR has increased in junior high schools and high schools in particular. The greatest use of VTR equipment was found to be in regular high schools, where 22 per cent of them have adopted it. Its use is expected to grow in the future.

Now we have sent more detailed questionnaires to those schools which answered in the above survey that they are utilizing school broadcasts. As a result we have found out how much each school broadcast program is being utilized, that is utilized regularly and systematically in class, not in the sense of audience rate as said of ordinary programs.

By means of these surveys we are able to know how much NHK school broadcasting programs are actually being utilized among schools all over the country, and this knowledge goes a long way toward the organization and production of better school broadcasting programs.

2. Survey on school teachers' view of educational broadcadcasting

Studies on various conditions obstructing the utilization of school broadcasts have been made several times in connection with surveys of utilization of school broadcasts by schools, in the form of a survey of teachers' views and wishes, for instance. An attempt was made in 1963 to make such studies more systematic, and has been kept up ever since.

Needless to say, utilization of school broadcasts depends a great deal upon conditions of radio and television set installation, and also upon electric wave conditions. But installation of a receiving set and good reception of electric waves do not always guarantee immediate utilization of school broadcasts. On the contrary, some schools are making good use of school broadcasts despite handicaps, by making the most of poor equipment or putting up joint aerials.

Utilization of school broadcasts also is influenced by surroundings of a

school and its locality, but it may be most subject to the influence of the attitude and judgment of school teachers themselves who have a choice of school broadcasts.

Thus, we attempted for the first time in 1963 a study on the factors affecting utilization of school broadcasts, otherwise named 'a survey on teachers' view of broadcasting education,' in order to ascertain what primary, lower secondary, and senior high school teachers all over the country expect from broadcasting education.

This survey was followed up with a second and third survey made in 1964 and the following year.

(1) 'Study on the factors affecting utilization of school broadcasts' (1963)

Three thousand schools out of all the primary schools in Japan (numbering about 26,700) were picked out by random sampling, and interviews were held with 2,870 headmasters and 2,840 classroom teachers.

Their view of broadcasting education was divided into four categories and analysed as follows:

How much broadcast teaching materials are trusted for their educational value ——— are broadcast teaching materials believed to be prepared by educational specialists, and adjusted to school children's interest and the course of study?

How much broadcast teaching materials are trusted for their effectiveness ——— is utilization of school broadcasts thought to be useful in the improvement of children's basic scholastic abilities and in the guidance of those children who want to enter a school of higher grade or obtain employment?

How much broadcast teaching materials are trusted for their efficiency ——— are broadcast teaching materials thought to lighten the teacher's burden, and to offer no great difficulty in preparing a special curriculum for them?

How much broadcast teaching materials are trusted for their social acceptability ——— how do the whole educational world and local teachers evaluate school broadcasts?

Survey results

Teachers' trust in the educational soundness and effectiveness of broadcasting teaching materials was found to be very great. It was the same with headmasters and ordinary teachers alike.

But it must be pointed out that teachers' view has not yet become absolutely favorable to broadcast education. Their evaluation was found to be rather negative in respect to their burden and their preparation of an appropriate curriculum when school broadcasts were used in class. That is to say, the use of school broadcasts has not got uncritically accepted yet, though there is a great difference in the evaluation of school broadcasts between teachers who are utilizing them and those who has not tried them yet, the former teachers' estimate being considerably higher. At any rate a further enlightenment effort is required on our part.

(2) 'Analysis on diffusion of school broadcasts' (1964)

This study aimed to analyse the process by which school broadcasting as an innovation had come to be diffused among groups of teachers, and the factors which had contributed to the process. We confined our survey to the Tokyo district, and made an intensive investigation into the motives of utilization of school broadcasts, reasons for their suspension, and reasons for not utilizing them yet. For this,184 classroom teachers within the Tokyo Metropolis were picked out by random sampling and interviewed.

Survey results

As for motives of utilization, we listed 16 factors which had influenced the first use of school broadcasts, and had the teachers mark the factors according to the strength of their influence. Thus, three factors ——— 'we thought school broadcast would increase children s interest,' 'we thought we could obtain abundant teaching materials based on fact' 'we thought school broadcasts would help to improve our teaching skills and make up for deficiency of teaching some subjects in which we were weak' ——— these factors got the highest marks from the teachers. This may be said to prove that the teachers began to utilize school broadcasts by judging indepently, in order to

satisfy their inner demands. Other factors found to be fairly influential were full equipment of receiving sets, good system of school organization, mass media, and informal leaders, in order of importance.

Table 3. Factors affecting utilization of school broadcasts in order of decisiveness

	Mean	Standard Deviation
1. We thought school broadcasts would add to children's interest.	4.14	0.86
2. We thought we could get abundant teaching materials based on fact.	3.94	1.01
3. We thought school broadcasts would help to improve our teaching skills and make up for deficiency of teaching some subjects in which we were weak.	3.51	1.13
4. We had full receiving equipment.	2.97	1.55
5. Utilization of broadcasts was decided at the teachers' meeting (or school-year conference).	2.77	1.96
6. At fellow teachers' suggestion.	2.71	1.36
7. Availability of books, magazines, and pamphlets on audio-visual education.	2.51	1.21
8. We thought school broadcasts would lighten the teacher's burden in preparing teaching materials.	2.48	1.32
9. The whole school had been enthusiastic over broadcasting education.	2.44	1.44
10. We were interested in electric apparatus.	1.83	1.25

11. We thought school broadcasts would help to unite children's homes with the school.	1.83	1.11
12. On a recommendation of scholars, researchers, or persons concerned with broadcasting.	1.65	1.12
13. At the headmaster's suggestion.	1.64	1.10
14. Our school was designated as a research school.	1.33	1.04
15. At a suggestion of Municipal Broadcasting Association.	1.32	0.84
16. At a suggestion of a school supervisor (or the Board of Education).	1.28	1.36

Note: The lowest mark, 1; the highest, 5.

(3) Investigation into whether 'utilization of broadcasting in junior high schools can be extended or not' (1965)

In 1965 we turned our attention to junior high schools. In order to find out conditions hindering utilization of school broadcasts in junior high schools, and some measures which would promote their utilization there, we began to examine into forms of the utilization, junior high school teachers' view of broadcasting education, and the extent of diffusion of information concening broadcasting education. For this purpose we picked, by random sampling, 559 schools out of all the junior high schools in the Tokyo Metropolis, Nara, and Kagoshima Prefectures, and interviewed 493 principals and 1,071 ordinary teachers. To summarize the findings, the forms of utilization in junior high schools are very different from those in primary schools in respect to the ways school broadcasts are used, the utilized media, the amount of recordings utilized. For instance, in junior high schools, many individual teachers make separate use of school broadcasts. Radio broadcasts are chiefly utilized there, and recordings are very much used.

Yet, junior high school teachers view educational broadcasting in much the same way as primary school teachers, and place as much trust in the educational soundness and effectiveness of broadcast teaching materials. On the other hand, they pass a somewhat unfavorable judgment upon the difficulty of preparing a special curriculum appropriate to educational broadcasts, and upon the problem of their burden, as primary school teachers do.

Non-use or suspended use of school broadcasts was found to be due not so much to the contents of broadcasts as to external factors ——— poor receiving equipment, junior high school teachers' taking charge of a subject, not of a class, special attention that must be paid to students who want to enter a school of higher grade or find a job, and likelihood of teachers of a school being transferred to another school.

The problem of students who want to enter a school of higher grade does not seem to have any great influence upon utilization of school broadcasts, at least in junior high school teachers' consciousness. As for the connection between utilization of school broadcasts and students' entering a senior high school, school broadcasts are utilized to the utmost extent in schools where the percentage of such students is between 60 per cent and 69 per cent. As the average percentage of those students in all the junior high schools in Japan is said to be seventy per cent, the relationship between school broadcasts utilization and the rate of those students may be regarded as proper on the whole.

Therefore, in order to promote school-broadcasts utilization, it may be necessary to attach much importance to the actual situation of utilization and to lay a principle of broadcasting education proper to junior high schools.

Also to be noticed in developing utilization of school broadcasts is the fact that the radio retains an important role in junior high schools. Although primary schools have a strong tendency to utilize television in class, the radio is expected to be utilized more and more in junior high schools.

Studies on utilization of broadcasts in junior high schools and inquiries into teachers' view of broadcasting education must further be continued. Also, further analysis is expected to be continued regarding the attitudes of high school teachers, kindergarten and nursery school teachers, and people on boards of education, toward broadcasting education.

3. Survey on the daily life of high school students taking correspondence courses and on their utilization of broadcasts

A national survey regarding high school students taking correspondence courses was made for the first time in 1958. Since then six kinds of surveys have been made on them.

(1) 'Panel survey on high school correspondence courses' (1963 - 64)

In this survey 'English A 1' and 'Mathematics 1' were chosen from among radio school courses,and,by sending questionnaries once every week to some NHK correspondence course high school students,we tried to find out consecutively how much the students had understood the contents of the programs and what they thought of them.

(2) Survey of correspondence course high school students at the time of schooling (1963)

Two programs were chosen each from among radio and television programs for senior high school correspondence course, and a survey was made of how much the contents of these programs were understood by NHK Correspondence Course High School students who attended joint schooling. In this survey, a program-analysis apparatus, tests, and questionnaires were jointly used. As a result we found out that the rate of understanding those programs was much higher in each subject among those students who regularly listened to or viewed them.

(3) Survey on the living condition of correspondence course high school students and their view of school programs (1963)

In this survey, an investigation was made by mail into the living condition of the correspondence course high school students all over the country (as represented by 7,897 students picked out by random sampling), their learning, and their view of high school correspondence course programs.

Survey results

Of all the correspondence course high school students, factory workers and craftsmen who are engaged in physical labor occupy about 40 per cent, and those students whose working hours are fixed as a rule occupy some 70 per cent. Those who answered 'a little tired', and 'very tired' after a day's work, occupy some 50 per cent and some 20 per cent, respectively.

The total of study hours averages 10.2 hours a week a head, a little less than an hour and a half a day in the case of NHK school students, about two hours and a half a day in the case of other correspondence course high school students all over the country.

(4) Survey made for the prevention of slow learners among correspondence course high school students (1963)

In this survey, picking out of NHK Correspondence Course High School students those who were slow in learning, we interviewed them at their homes, and thus obtained data for the prevention of learners who cannot get along with their studies and drop out.

(5) Survey on the daily life of senior high school students taking correspondence courses (1964)

Broadcast programs for the senior high school correspondence course are different from the school hour programs which are utilized within the framework of a definite guidance plan, and made use of by individual correspondence course school students with differing living conditions within their learning plan. Therefore, in order to obtain basic data for organization of school broadcasts, it is really necessary to know how the daily life of correspondence course school students is spent. In making this survey, we picked out 2,129 senior high school students taking correspondence courses from all over the country, and asked them some questions by mail.

Survey result

On weekdays 70 per cent of them get up by seven o'clock in the morning,

and 75 - 80 per cent of them work from 8:30 in the morning till 4:30 in the afternoon. They begin to study at eight in the evening, and the largest number (40 per cent) of them are studying at about nine. Those who study lessen at 10:30, and after eleven 70 per cent of them go to bed.

The most suitable time for their listening to the radio or viewing television about coincides with their study time. As is shown in Fig. 2, from 8p. m. to 10:30 p. m. on weekdays and Sunday alike is the most appropriate time for their listening to the radio or viewing television.

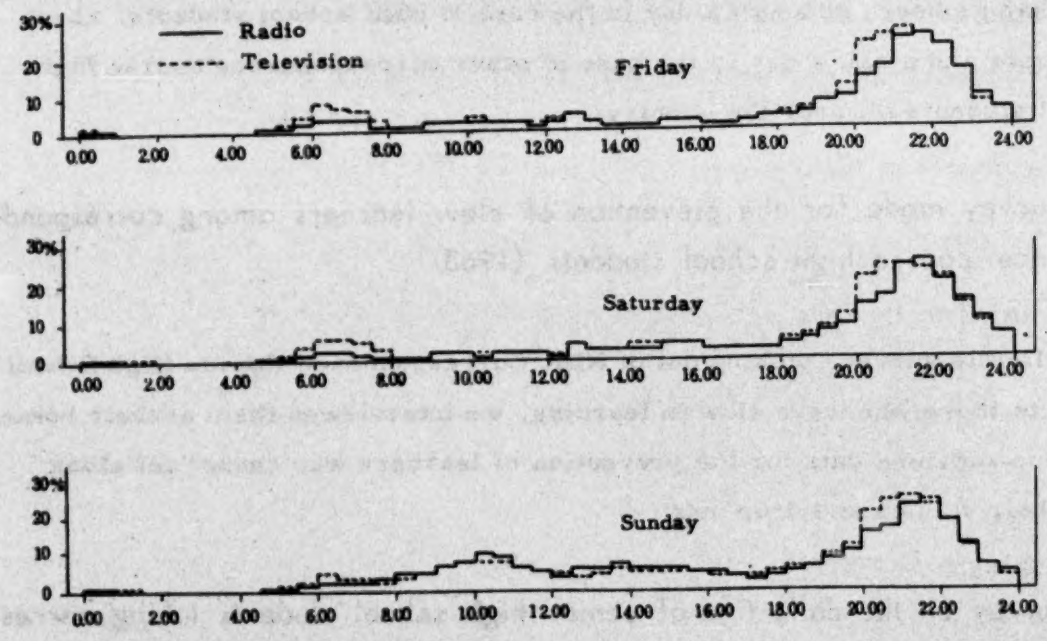


Fig. 2 The most suitable time for listening to the radio and viewing television

(6) Survey on evaluation of programs for senior high school correspondence course (1964 - 65)

In making this survey we took up three programs treating of mathematics in which high school students (as represented here by three hundred of them) taking correspondence course, and investigated how much they had understood the contents of the programs and how much interest they had taken in them.

The above are the principal studies on utilization of educational programs. Let us go on to studies on programs themselves.

II. Studies on production of education programs

As will be seen in Chapter III, the educational effect of school broadcasts depends upon teachers' guiding ability and the length of a period of their ulilization. But, the decisive factor is excellence of programs themselves. Therefore, a study of programs is important not only to their producers but to students and teachers.

Our study of programs can be divided into two kinds.

1. Studies for analysis and evaluation of education programs.
2. Studies on the principles of program production.

The former consists in an analysis of programs to be broadcast, and the latter consists in making and comparing several experimental programs in order to find out some general principles of program production.

I Studies for the analysis and évaluation of programs

While surveys on utilization of school broadcasts by schools reviewed in the previous chapter were an investigation made with a view to being useful for program organization from a 'macroscopic' point of view, investigation concerning evaluation of programs is intended to make for the improvement of individual programs through a 'microscopic' analysis of forms and contents of those programs.

In this case, an investigation method goes through the following procedure.

First, we try to find out, by means of an advance test, how much knowledge relative to the contents of a program a subject (or a testee) has, and have him listen to or view the program. Then, by means of a test given immediately after the program, we examine how much of the contents of the program he has understood and retained in his memory (several weeks later we examine again how much he has retained in his memory by giving the same test.) Also, while he is listening or viewing, we have him answer such questions as 'Are you interested? or 'Have you understood?' by using a program analyzer, and so study the flow of the program and its relation with the result of the test. Besides, in most cases, we inquire his general view of the whole program by a questionnaire.

This kind of study has been made many times since 1948. Let us

introduce to you only two out of fourteen inquiries made from 1960 to the present.

(1) TV Science Class : 'Why and how matter sinks and flows' (Primary school 4th grade) (1961)

Purpose and method

In order toandetermineappropriate construction of the contents,several programs on the same subject but different in construction are produced by way of trial and examined.

The program analyzer and a 'immediately-after' test.

The results recorded by the analyzer (interest reaction)

Reaction of 'interested' (Like) has a tendency to be retained after reaching a certain height.

A beginning of increasing reaction appears when a phenomenon comes out on the screen, rather than in words of introduction to the phenomenon.

Verbal explanation by the teacher does not arouse interest very much. Even when the same phenomenon is generalized, loss of interest has a tendency to be less when the phenomenon remains the same on the screen or when it is explained by a pattern,than when the teacher occupies the screen.

Test : results of examination

When we gave a test immediately after having had children view the program, we found that it was rather difficult for them to derive a basic principle by generalizing what they saw, even though they understood and retained in memory concrete facts and phenomena that appeared in the program. We found it necessary to make a further study on this point by making various changes in conditions ——— the theme of the experimental program, the semantic level of children who were subjects, presence or absence of the teacher's guidance immediately before or after the children's televiewing.

(2) TV English Class : 'A Christmas Story' (Junior high school 2nd grade) (1964)

Purpose and method

We combined a standard achievement test with a hearing test, and examined whether there was any difference in understanding the contents of the program between students living in the Tokyo area and those living in the provinces, according as they had viewed the program continuously or otherwise.

Program analyzer, hearing test, questionaires.

Results recorded by the program analyzer
(Reactions of interest and understanding)

The pupils showed more or less interest according to the schools they belonged to, and the great interest was taken in dramatic parts of the story whether they belonged to schools in the Tokyo area or they belonged to schools in the provinces.

As for understanding, students belonging to two schools in the Tokyo area and to a school in the provinces (Ibaraki Prefecture), who were used to the regular and continued viewing of school TV broadcasts, rarely showed reaction of non-understanding, while students belonging to schools in the provinces where they did not see TV school broadcasts often complained of their inability to understand.

Results of hearing test

Almost all the students in each school did fairly well in answering questions that tested whether they had caught English words and sentences correctly, but they did not do very well in questions in the form of 'questions and answers' that tested the ability to catch the meaning of questions and to answer them quickly. There was a distinct difference in achievement between schools in the provinces that had their students watch TV school broadcasts regularly and continuously and those that had not.

Afterward, we found that such evaluation-investigations as mentioned above might be useful in the improvement of individual programs, but that it was difficult to apply rules derived from the investigations to programs in general, so that, with a view to realizing the purpose of the investigations

more properly, we went on to a study of principles of program production.

2. Study of principles of program production

As can be seen from above, a combination of elements of which a program is composed is different according to individual programs, so that, though the results obtained may apply to the program which is an object of our study, it is difficult to generalize and derive a general rule from them that applies to educational broadcasts in general. One of the effective ways to find out such a rule can be to produce a program by way of trial with all its conditions controlled except its intended objective and make an experiment with it.

(1) 'A basic study of image communication' (1962)

A study for finding out general principles of program production by using such an experimental method and adopting the results of study psychology and other related sciences was begun in 1961. In the next year, data pertaining to the comparison of between imagery and language was examined.

(2) 'An experimental study on the function of audio-visual methods in concept formation' (1963)

A practical study of this kind was begun in 1963. The study with the above title was conducted on the basis of investigation of data mentioned in (1).

An experiment was made on 1,536 students (3rd and 5th grade primary school children and 1st and 3rd grade junior high school pupiles) in the Tokyo area in June and September, 1963. As materials for the experiment, color photographs, sketches of the same shape and size as the photos drawn in black lines, letters showing names and titles were used. We presented each of them to different testees an identical quality, and measured how much they had learned (or retained in their memory) and other related matters.

Results

1 Through this experiment we found that visual presentation of color

photos and sketches were more effective in impression than presentation of letters, especially so in a lower-age group and lower-intelligence group.

2. It is generally recognized that as a rule when a child reaches eleven years of age his memory goes down temporarily as a result of change of his memory pattern. But we found that this lowering of memory could be prevented by presenting concrete, visual imagery to a child of that age. Thus we have demonstrated a powerful argument that guidance of primary school children of the 5th grade by means of visual imagery is significant.
3. When a child thinks or tries to solve a problem not only in an experiment or observation related to science but also in general matters, a decisive factor is how he looks at a thing. By being presented various things concretely and visually, he comes to take note of their use, function, and attributes such as shape and color. On the other hand, when they are presented a thing in the form of letters, it was found, they tend to take note of the class to which it belongs (animal for instance).
4. Besides, when one is thinking, it is often necessary and important to switch over from one way of thinking to another. When we examined this switchover, we found that a switchover from a viewpoint of the use, function, and attributes of things to that of their class is difficult, but not the reverse. Presentation of letters was found to have the reverse characteristic.

From the above result, it may be said that an addition of appropriate explanatory words is necessary for a concrete, visual expression by means of television or slides, while an addition of proper visual expression is important for an explanation in words. A child's thinking can be greatly influenced by the appropriateness of means of communication.

(3) An experimental study on school TV programs from the viewpoint of children (1963 - 65)

With a view to making the experiment mentioned in (2) above more practicable in program production, we began preparing for a new experiment

in 1963, and completed the following experimental study made up of two stages in about two years and a half.

The 1st Stage 1963 - 64

By using slides and recording tapes we made an experiment in a simplified situation.

The 2nd Stage 1964 - 65

On the basis of results of the first stage, we went on film location, and produced three experimental programs in a complicated situation containing filming and sound effects (with the assistence of NHK Board of Education).

Purpose

1. We examine whether or not we can find some principle in the frame and the use of speech, in order to call children's thinking into activity. (This is the first stage.)
2. We confirm or revise some principle or principles discovered in the first stage, by using an experimental TV program produced in the same style with its real broadcast program, and also examine the characteristics of television in comparison with slides. (This is the second stage.)
3. We examine how this principle of the use of speech and of the frame varies according to children's age and relative difficulty of the contents of a program (the first and the second stage).

Material for experiment

Science unit for primary school 6th grade, 'A forest'.

Subjects

The 1st stage:672 third, fourth, fifth grade pupils in two primary schools in the Tokyo area. The 2nd stage:306 third, fourth, fifth grade students in a primary school in the Tokyo area.

We can think of three basic ways of the use of speech connected with the frame, so that we set up three methods of appending speech to the frame

and divided the subjects into three groups.

1. 'Orientation-type'
   Simultaneously with projecting a picture on to the screen, we give words (hints or questions, for instance) which compel the subjects to catch the import of the picture and which direct their minds.
2. 'Commentary-type'
   Simultaneously with projecting a picture on to the screen, we give words which describe the picture and explain its meaning.
3. 'Orientation-commentary type'
   Combining 1 with 2 above, we both direct the subjects to catch the import of the picture and comment on it.

Results

Results of both stages of this experiment, described together, run as follows:

1 As to the problem of how much of the contents of a program can be understood, the experiment by means of slides showed that the 'commentary type' was the most effective. But, in the case of a television program, we found that there was little difference between the 'commentary type' and the 'orientation type', and in an experiment with the fifth grade students both types were equally effective. It was discovered that, as television has far greater expressive powers than slides, heightens children's motive of study much more, and is more closely compact in construction, the 'orientation type' which develops a program only through hints and questions has sufficient power in the case of television to make children understand.

2. The experiment by slides showed that, while the 'orientation-type' guidance, considering the mark it brought in the test regarding the contents of a program, earned a good mark in the test checking up on the children's applicative power, the 'commentary type' guidance, on the contrary, brought a bad mark in the latter test. That is to say, the 'orientation type' guidance was found to have a merit of bringing children's applicative power of learning into play. In the case of television as well, this merit of the 'orientation type' of guidance was clearly demonstrated by the fifth grade children.

3. The slide experiment showed that while the 'orientation type' brought a better mark rather in the 'three-week-later test' than in the 'immediately-after test', just the reverse was true of the 'commentary type' In other words, the 'orientation type' seems to have a strong point that it has a long-range effect. This tendency was seen in the case of fourth and fifth grade children.

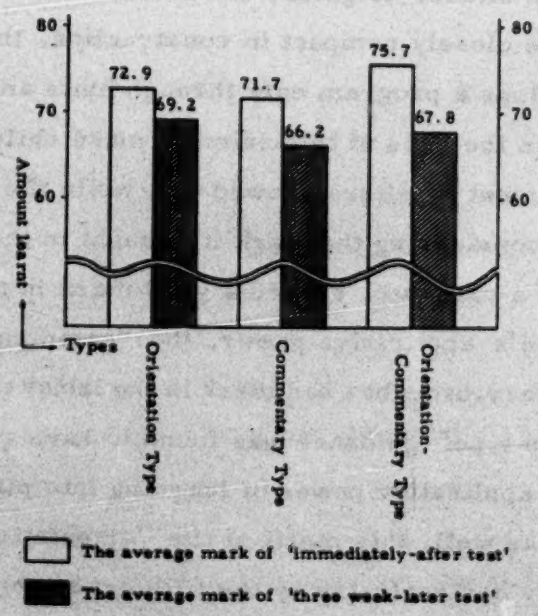
4. The 'orientation-commentary type' is, despite its scrupulousness, has nearly same characteristic as the 'commentary type', and is not always effective.

The above results serve for an answer to a generally-held doubt about production that radio and television broadcast teaching materials may be weak in training children's thinking power. It may be said that an excellent expressive power which television pictures have makes children understand better, and, what is better, gives them even room to think for themselves. This can be accomplished, it was demonstrated, by an addittion of appropriate words to the television frame.

Of course, this study gives suggestions as to what all kind of educational and culture programs ought to be, and should be furthered so as to examine the nature of the contents of a program and its form.

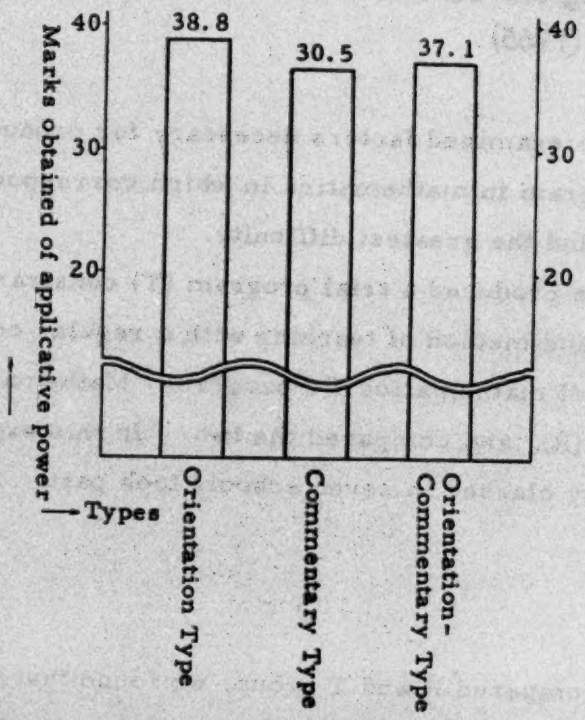
Here are shown in a graphic form the results of the above experiment by means of television programs.

Fig. 3 The amount learnt of program contents and retention
Full marks : 110



Note: Is there a difference in comprehensibility between the three types?
—— ☐ answers this question, i.e. shows how much children have understood immediately after watching the program on TV.
▨ shows how much they remember three weeks later.
The above is the result of an experiment made with the fifth grade children only.

Fig. 4. Ability to apply what they have learned from program contents
Full marks : 90



Note : How much applicative power did the three types of programs give children of what they had been taught?
To answer this question a test was given immediately after they had watched TV. The above is the result of the test given to fifth grade children only.

(4) Study on English teaching programs to improve hearing and speaking (1965)

In this experiment, we took up teaching materials of 'TV English Class:

the '2nd grade,' and examined mainly how 'hearing' English could be effectively taught. For this we produced three experimental programs different in construction and compared their effectiveness in teaching hearing and understanding English. In organizing these programs, we paid special attention to the 'skit' inserted in the programs to see how many times it ought to be repeated, and to the use of letters projected on to the screen.

As subjects we chose 432 students who were not regular views of 'TV English Class,' and gave them two tests before and after they had seen the program and an intelligence test.

(5) Study on program construction for senior high school correspondence course (1965)

Purpose : We examined factors necessary for producing an 'easy to understand' program in mathematics in which correspondence course high school students find the greatest difficulty.

Method : We produced a trial program (T) constrasted in construction, representation, and method of teaching with a regular correspondence course high school mathematics TV program 'Mathematics I, Quadratic Function Graph' (R), and compared the two. In this experiment, 652 students of twenty classes in seven schools took part.

Results

When we compared R and T group, we found that T group did better in basic matters for a premise and demonstration problems, while R group did better in exercises and problems for application, indicating different effects according to the construction of the contents of the two.

When we had divided the students' achievements into 'good,' 'medium,' 'poor' according to the marks they got in a before-the-act test, we found that T program tended to be well understood by students of good achievements whi e R program tended to be well understood by students of not very good achievements.

'Study for the analysis and evaluation of programs' is intended to examine each broadcast program individually and generalize from results of the examination. On the other hand, 'study on principles of program production' is

intended to examine effects by supposing possible methods of production beforehand and producing trial programs. Therefore, the former study may be said to be inductive and the latter deductive. The former offers many hypotheses to the latter, and when the latter has set up a principle and an actual program has been made on the basis of that principle, it (the latter) must be examined by the former method. In a word, we believe that the two should complement each other.

Ⅲ. Study on effects of progams

Will an educational effect be improved by utilizing school broadcasts? It is difficult to answer this question definitely. A long history of study of effect proves this difficulty. The best answer we can give to this question is, we feel, that in some cases school broadcasts are very effective and in others they are not very effective. That is to say, the educational effect of broadcasts depends upon many factors ——— the quality of programs, school teachers' ability of guidance, students' abilities and interest, the length of utilization period of programs, and so on. Also, school broadcasts have various kinds of effects upon children and students; some will add to their knowledge, some rouse their curiosity, and others stir their imagination. Each will depend upon the factors cited above.

Consequently, it is necessary for us to speak of students' progress in study only after we have made clear, as far as possible, under what conditions they have learned from broadcasts. We shall speak here of the effects brought about after they have listened to or watched at least several programs, not one alone.

We already made a study of effects of the radio in 1943. Here we shall summarize the results of studies made by 1960.

1. There appears little difference in effect between a group that listens to the radio for one school term and a group that does not, but if the one group continues listening for two terms and the other does not, a noticeable difference appears between the two.
2. The way such a difference appears is different from school to school, and this may be considered to be due to teachers' guidance.
3. The effect of listening appears in the form of progress in hearing Japanese and English. This effect seems to extend to ability of

reading and writing. (For the experimental group, despite its loss of time for reading and writing because of a special class for listening, it must take part in shows the same results as the control group in reading and writing ability.

4. In English, the effect of listening is higher with students of higher intelligence than with those of lower inteligence.

Of principal studies made since 1961, let us introduce to you the following four:

(1) A Study of effect of a long-range utilization of English programs (1961 - 62)

Purpose : The effect of utilization of 'English TV Class' was measured in terms of an ability to hear, read, and write English.

Method : Subjects were 178 1st grade junior high school students in the Tokyo area. During the utilization period of a year, three tests were given them, and the result was compared with that of those who did not view the program.

Result : The effect of TV program appeared most clearly when the teacher's ability of guidance was poor.

(2) An effect survey of TV school broadcasts on children in isolated villages (1962 - 63)

Purpose : We measured the effect TV school broadcasts had upon the scholastic abilities and intellect of children in an isolated village.

Method : Subjects were 140 fifth grade pupils of a primary school designated as 'isolated' in Gumma Prefecture. We had them view 'TV Science Class' and 'Social Studies' programs for a year, and gave them four tests. The tests were achievement tests, a 'study interest' test, and a 'social attitude' test. The results were compared with those of the non-TV-viewing group.

Results

1. The TV-viewing group showed a remarkable progress in intelligence and achievements in social studies and science, as compared with the non-TV-viewing group.

2. In an intelligence test, they showed great progress in test items in which speed and memory work; the effect of TV was remarkable in their learning social studies (Industry, Commerce, Trade, Traffic), and sciences (Biology, Physics, and Chemistry).
3. Children, whose intelligence and achievements in social studies and sciences the 'before-the-act test' had shown to be pretty lower than the national level, after viewing TV for a year, rose higher than the national level to 51.2 marks in the average standard score of intelligence, and rising four marks in the standard score in science and 1.6 marks in social studies, considerably drew near the national level. On the other hand, the control group went down in their achievement in social studies.

Table 4 Change in a year in all the TV-viewing children

		Fifth test (Apr. 1962)	Fifth test (Mar. 1963)
Intelligence	Average	43.6	51.2
	Standard score	11.70	12.46
	Number of children	141	141
	Examination	t = 5.27	
Social Studies	Average	43.6	45.2
	Standard Score	9.75	8.24
	Number of children	139	139
	Examination	No significant difference	
Sciences	Average	42.1	46.1
	Standard score	8.82	8.03
	Number of children	140	140
	Examination	t = 3.96	

(3) An effect survey of use of a program for moral guidance (1964 - 65)

Purpose : We examined an influence the consecutive use of a moral guidance program had upon children's moral judgment, mental attitude, and conduct, and ways in which different forms of viewing it worked.

Method : Subjects were 200 fourth grade students of a primary school

in the Tokyo area. We had them view a TV moral guidance program 'We are all good friends' for a year, and gave them three tests during the period. The tests were morality-tests and a socio-metric test. Their results were compared with the results of those who did not view the program.

Results

Result of morality tests

The experimental group got better marks in the 'after-the-program test' than in the 'before-the-program test,' so that we can recognize a definite educational effect on morality during the one-year period.

Result of a socio-metric test

The class structure of the experiment group was more integrated in a subordinate group after the program than before, and lessing in number, showed unity.

(4) An effect study of teachers' types of guidance (1965)

Purpose : We measured how the effect of the same program differed according to teachers' types of guidance.

Method : We had 170 fourth grade pupils of a primary school in the Tokyo area view a TV 'Social Studies' program for a period of two months. In doing this, we divided the pupils into three groups and gave them the following types of guidance.

A. the group that was made to grasp the intent of the program and guided to apply it to other related matters (thinking-oriented teaching)..... the application group.
B. the group that was guided after the program to remember concrete facts in the program (memory- oriented teaching).... the oriented group.
C. the group that was made only to view the program, not guided .... the non-guidance group

Survey results

When pupils were guided to pay special attention to the aim of the program broadcast every week and to apply what they had learned to other

related matters, they learned much more of the contents of the program than when they were made only to view it without guidance.

When they were guided to attach importance to applying what they had learned, they showed better results not only in their applicative power but also in their memory of the contents of the program.

The application group and oriented group did better than the non-guidance group ——— which proves that some guidance increases the effect of a program.

Interest in social studies increased by viewing television, especially when thinking oriented teaching was added.

Though the above results may apply to any subject of study in principle, it was proved here that a utilization effect varies considerably despite the regular use of the same program according to teachers types of guidance.

The above effect-study has connection with the program-study reviewed in the previous chapter. We feel that we must further our studies having in mind what kind of effect is produced when various factors such as the quality of a program, teachers types of guidance, the characteristics of a subject of study, and the length of utilization period are combined.

To conclude, we shall cite two things which seem most important to the study of educational broadcasts. One is a refinement of methods of effect measurement. We must improve both methods of survey and yardsticks for measurement. The other is to consolidate basic theories on broadcasting education by adopting such related sciences as theories of learning, communication theories, and child psychology.

Ⅳ. Studies on effects of broadcasts on children

According to a report by W. Schramm in 1961, children spend at home nearly the same hours in listening to and viewing entertainment programs for children and adults as they do at school. Therefore, we should not confine our attention to education through school broadcasts alone, for we must deal with all conditions bearing upon the development of children.

We have made several surveys on the effects of broadcasts on children since we made a national survey on the effects of the radio on children in 1952. Here we shall introduce to you some of the principal surveys made on this problem.

(1) Survey of effects of broadcasts on children (1957 - 59)

This survey is included in 'The Effects of TV on Children and Adolescents' compiled by UNESCO, as one of the four great surveys in the world along with surveys by H. T. Himmelweit of Great Britain, G. Maletzke of West Germany, W. Schramm of U. S. A. So we shall mention only the main points of the survey.

The most important things about the Shizuoka Survey (so called because it was conducted in the city of that name) are (1) that a survey was made of the same children before and after TV sets were installed in their homes, and differences before and after the event were compared, and (2) that the validity and authenticity of the questionnaires were verified.

3 Surveys made about television and children up to that time had been confined to inquiry into children's fondness for particular programs, their habits of viewing television, and a consequent change in their daily habits and conduct. But the Shizuoka Survey delved into the matter more deeply, and tried to explore experimentally children's habits and conduct brought about by their contact with television over a long period.

Thus, the survey answered a question how they could find many hours they would spend in viewing television, and tried to grasp objectively psychological effects which a change in their babits caused.

This detailed survey made on a large scale was conducted by members of our Institute with Dr. Takeo Furu as leader.

(2) Survey on the effect of violent scenes on children (1960)

Purpose : We tried to make clear how children and adults take violent scenes in a TV program, the relation between the two, how they were related if at all.

Method : We chose two Western films containing many scenes of violence and made a survey with these as materials. We picked out a primary school and a junior high school in the Tokyo area, and made a survey with 5th grade primary school pupils, 2nd grade junior high school students, and parents of the former as subjects.

As for survey methods, we made use of both reaction-recordings during watching television and questionnaires.

Survey Results

1. Scenes which parents are afraid of letting their children see, and at which they feel unpleasant themselves.

There seems to be some connection between their anxiety about violent scenes and their unpleasant feelings.

Scenes at which parents' anxiety and unpleasant feeling are uppermost in point of conduct are scenes in which they think their children will feel cruel or unpleasant, scenes in which weapons easy for their children to get are used, and scenes in which their children's interest in weapons will be aroused. On the other hand, scenes in which parents do not feel anxiety about their children are scenes in which a standardized fight is done, standardized high-light scenes, and so on.

2. Scenes in which children took interest.

In point of conduct, scenes in which children take interest are high-light scenes such as a gun-fight, show-like scenes in which all are surrounded by fire. Scenes in which they take little interest are scenes in which a man levels a rifle and takes aim, and scenes in which a man twines a rope around the neck of another or binds another.

(3) Study for changing program choice of children (1964 - 65)

Purpose : We tried to find a way to lead the attitude toward the choice of programs at home in a healthy direction.

Method : We picked out 425 fifth grade pupils from three primary schools in the Tokyo area. They were of an age at which they watch television for many hours a day and like to see adventure and cartoon programs.

For the convenience of the survey we divided ten classes of pupils into three groups: A, B, and C. Then, in Group A, four opinion leaders were chosen from each group by socio-metric method and 'guess-who-test'. Each leader was coached about a good way of watching television, and each leader leaded a discussion in his class in accordance to the way he had been coached. Group B took up the same topic as group A, and the teacher in charge of the group lead it in class. Group C was to be a control group. Also, as materials for the use of groups A and B we distributed 'lists of recommended programs' selected by the pupils themselves in advance.

Result

1. Both the group which held a class meeting and the group which the teacher taught showed a change in a desirable direction, which proved that this method was an effective way of guiding TV viewing of children. As the result children who would watch recommended programs discussed in class or taken up by the teacher increased in number (not greatly, it must be admitted), and so those who would watch 'better programs also increased.
2. As for the attitude toward televiewing, there was a change from the state of being at the mercy of television to an independent attitude of turning television to good account in their daily lives. And reasons for their liking particular programs changed from entertainment to educational and cultural interest. But no change was recognized in the general way of looking at television, whether in terms of entertainment or culture.

It may be added that we have in view a large-scale survey about television and children on the basis of the above survey.

To our Readers

We have thus far introduced to you some of the principal surveys we have made since 1960. We consider it our future task to advance our studies in the four fields and open a new field as well.

We heartily hope that broadcasting authorities, research workers, and school teachers interested in broadcasting all over the world will send us as many pieces of advice and suggestions as possible. We intend to make an English version of some of the above-mentioned studies in the near future, and are looking forward to exchanging research papers with you.